

Clinical Profile of Patients with Knee Osteoarthritis at a Government Hospital in Eastern Nepal

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ABSTRACT

Introduction: Knee osteoarthritis (OA) is one of the leading causes of pain and disability in old age worldwide. Its prevalence increases with age, is fairly more common in females than males and is strongly associated with heavy physical activities which is usually required to earn livelihood in most of the developing countries. There are very limited data on prevalence of knee OA from Nepal. This study aims to elaborate the demographic and clinical profile of patients with knee OA presenting to Orthopaedics Outpatient Department (OPD) of Koshi Hospital.

Methods: A descriptive cross-sectional observational study was carried out in 280 patients who were diagnosed with knee osteoarthritis presenting to orthopaedics outpatient department of Koshi Hospital between January 2023 to December 2024. Demographics including age, sex, occupation, BMI, clinical findings including pain and stiffness and radiographic grading were recorded.

Results: In this study, females were more commonly affected than males. Most commonly affected age group was 60-70 years (34.3%). Farmers had more prevalence followed by labourers. 68(24.3%) patients had some form of previous knee trauma. Pain was the most common presenting complaints followed by swelling and stiffness. 55% of patients were overweight (BMI-25-9.9), 36% normal weight (BMI-20-24.9) and 12.5% were obese (BMI>30). Radiologically, most of the patients were categorized as Kellgren and Lawrence grade II and III

Conclusion: Knee osteoarthritis is a common cause of morbidity throughout the world. It is more common in elderly and frequency increases with age. Females are more affected than males and is more common in heavy workers.

Keywords: Knee Osteoarthritis; Prevalence; Kellgren and Lawrence Grading; Knee pain.

1. INTRODUCTION

Osteoarthritis (OA) is one of the most common causes of pain and disability, particularly in elderly, representing a significant burden for individual and society. Knee is one of the most common joint for osteoarthritis, probably because it is weight bearing joint and of its anatomic location .[1] Patients with knee OA usually present with knee pain, swelling, stiffness and difficulty in bearing weight.[2]

Knee OA is diagnosed on the basis of clinical findings and radiological assessment. Patients usually present with pain of varying duration, stiffness, swelling of the knee joint and sometimes deformity of the knee. Examination findings include joint line tenderness, decreased range of motion, crepitus, varus/valgus alignment of the knee joint. [2,3] Xray shows decreased joint space, presence of osteophytes, subchondral sclerosis and deformity of the knee joint.[4] Based on radiological findings, Kellgren and Lawrence grading system has been proposed has been proposed (Table 1).

Management of knee OA depends on patients characteristics, severity of symptoms, radiological grading and patients' demand. Management ranges from weight reduction, physical therapy, pain management with NSAIDs to corrective osteotomy and knee replacement (unicondylar knee replacement/Total knee replacement).[5]

Table-1. Kellgren and Lawrence Grading of Knee Osteoarthritis[4]

Grade	Description
0	No radiographic features of Osteoarthritis
I	Possible joint space narrowing and osteophyte formation
II	Definite osteophyte formation with possible joint space narrowing
III	Multiple osteophytes, definite joint space narrowing, sclerosis and possible bony deformity
IV	Large osteophytes, marked joint space narrowing, severe sclerosis and definite bony deformity

2. METHODS

An observational cross-sectional study was done on 280 patients with knee osteoarthritis attending the orthopaedics Out Patient Department (OPD) of Koshi Hospital, Biratnagar during the period of January 2023 to December 2023. These 280 cases of osteoarthritis were recruited in this study using convenient sampling technique. Ethical permission was taken from hospital administration. Patient data were collected in a proforma and confidentiality was maintained.

Inclusion Criteria:

1. Confirmed cases of osteoarthritis
2. Age from 40-80 years of either sex
3. Willing to participate in the study

Exclusion Criteria:

1. Age<40 and >80
2. Cases of OA with severe comorbidities

Patients presenting with knee pain to the outpatient department of orthopaedics were evaluated with thorough history and detailed clinical examination to confirm the presence of osteoarthritis. Necessary radiographs were done and appropriate treatment was also given.

All the patients and concerned party were explained about the purpose of the study and the methods used. Informed written consent was taken and full confidentiality was assured. The collected data were stored and analyzed with statistical software (MS Excel and IBM SPSS for Windows) to get final results. All the meaningful statistics were worked out and analyzed thoroughly.

3. RESULTS

Among total 280 participants, 155(55.4%) were female and 131(44.6%) were male. Table 2 shows the distribution of study participants as per age and sex.

Table-2. Distribution as per age and sex

Age(years)	Males(n)	Females(n)	Total, n(%)
40-50	16	12	28(10)
50-60	34	43	77(27.5)
60-70	45	51	96(34.3)
70-80	36	43	79(28.2)

Our data revealed knee OA was more common in farmers (32.9%) followed by labourers (30.4%). Table 2 shows occupation wise distribution of knee OA in our study.

Table-3. Occupation-wise distribution of the participants

Occupation	n(%)
Labourer	85(30.4)
Farmer	92(32.9)
Housewives	59(21)
Bankers	17(6)
Government officers	27(9.6)

Knee pain was the commonest presenting complaint (82.5%) followed by knee swelling and stiffness. Many patients had two or more of the symptoms. Table 4 shows frequency distribution of symptoms that patients in our study presented with.

Table-4. Frequency distribution of symptoms

Symptoms	n(%)
Pain	231(82.5)
Stiffness	106(37.9)
Limping	96(34.3)
Swelling	105(37.5)

Most of the patients in our study were overweight (BMI-25-29.9, 55%). 36% of the patients were of normal weight and 12.5 % of the patients were obese.

Table-4. Frequency Distribution of BMI

BMI	n (%)
<19(Underweight)	0
20-24.9(Normal)	101(36%)
25-29.9(Overweight)	154(55%)
>30(Obese)	25(12.5%)

Most of the patients in our study presented with Kellgren and Lawrence grade II (34%) and grade III (29.6%). 68(24.3%) patients had previous history of trauma.

Table-4. Kellgren and Lawrence Grading of the patients

Grading	n (%)
I	44(15.7)
II	97(34%)
III	83(29.6%)
IV	56(20%)

DISCUSSION:

There are several studies on the prevalence of knee osteoarthritis in general population. But only few studies are available describing clinical profile of patients attend OPD. [2,3,5] No such studies were found from Nepal. As mentioned in various literatures, our study too suggested that knee osteoarthritis was more common in females and its prevalence increases with age. [6],[7]. Commonest age group for knee OA in our study was 60-70 years with preponderance for female (55.4% vs 44.6% in male).

The most common presenting symptom was knee pain followed by swelling and stiffness. The most common occupation affected was farmer followed by labourer and housewives. Prevalence of knee osteoarthritis was directly proportional to BMI of the patients. Overweight patients (BMI-25-29.9) had highest prevalence followed by normal BMI (20-24.9). Kellgren and Lawrence type III was commonest grade followed by type II.

Akkimaridi and Mohan Kumar observed that knee OA was more common in females than males and we also observed the same.[8] Similar were the findings in a study done by Krihnamurthy et al. [2] But our study was in contradiction to the findings of study done by Shakoor et al where they found knee OA was more common in males than in females. [9]

Majority of patients in our study was in the age group of 60-70 years, which is similar to the findings of Krishnamurthy et al and Racaza et al.[2],[10]

In our study, knee osteoarthritis was more common in farmers followed by labourers whereas the study done by Krishnamurthy et al showed it was more common among labourers.[2] Our study showed knee OA was associated with higher BMI which was similar to the findings of Castano et al. [11]

Knee pain was the commonest presenting complaint in our study followed by knee stiffness and knee swelling. Most of the patients in our study presented with Kellgren and Lawrence grade III followed by grade II which was similar to the findings of Muraki et al. [12]

CONCLUSION:

Knee osteoarthritis is a common cause of morbidity in elderly. Females are more commonly affected than males. Heavy workers and occupation involving repeated squatting are at higher risk for knee OA. Knee pain is the commonest presenting complaint and higher the Body mass Index (BMI), higher chances of developing knee OA.

CONFLICT OF INTEREST: None

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